

# Work Order ID 58618

May 12, 2010 12:32:36 PM



Page 1

Item ID: D2580-1

Accept



Setup Start



Revision ID:

Item Name: 205 Skidtube bent detail

Stop



Start Date: 12/05/2010 Start Qty: 2.00



Cust Item ID:

Required Date: 18/05/2010 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: RD Date: 10-5-12 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2580	Rev D								
100		0.00							
	Hand Finish								
Hand Finishing	Memo	0.00							
	1- Inspect mat'l D2500-1-190 for damage.								
	2- Chemical Conversion Coat as per QSI 005 4.1								
101	QC3- Inspect Part Finish	0.00							
	QC								
Quality Control	Memo	0.00							

2 M10/5/17

2 BE 19/05/17

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)					
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 2

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Revision ID:

Stop



Item Name: 205 Skidtube bent detail

Start Date: 12/05/2010 Start Qty: 2.00



Cust Item ID:

Required Date: 18/05/2010 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

110

0.00



Skidtubes

Memo

0.00

Skidtubes

1-Drill pilot holes using drill jig DT 8149 (Do not use cutting fluid)

BE 10/05/17

2-Open holes to 0.500" as per Dwg D2580 without cutting fluid

3-Deburr and blow out all chips from inside of tube

4-Bond web in place per QSI 015.

□□  
A/R Sikaflex-291 batch: M11342 □□□

Sikaflex expire date: 10/11/35

Start time: 3:00 bond for 12hrs

) M 6/5/17

130

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Sokoloski

(X2)

W/O:			WORK ORDER CHANGES					
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**NOTE:** Date & initial all entries

**Work Order ID 58618**

May 12, 2010 12:32:36 PM



Page 3

Item ID: D2580-1

Accept



Setup Start



Revision ID:

Stop



Item Name: 205 Skidtube bent detail

Start Date: 12/05/2010 Start Qty: 2.00



Cust Item ID:

Required Date: 18/05/2010 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

140

Identify as per dwg & Stock Location: 46

0.00



Packaging

Memo

0.00

Packaging

211/2/5/17

150

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/05/19 *[Signature]*10-5-19  
(2)

W/O:			WORK ORDER CHANGES					
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**NOTE:** Date & initial all entries

# Picklist Print

May 12, 2010 12:32:40 PM

Page 1

Work Order ID: 58618



Parent Item: D2580-1



Parent Item Name: 205 Skidtube bent detail

Start Date: 12/05/2010

Required Date: 18/05/2010

Comments: IPP B01.11.08 Revised Step 9, 10, 12, and 13 SM

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Qty Issued	Date Issued	Status
D2500-1-190  Ext'n -'I' Beam Tube 4"		Manufactured	No				Each	46.0000	1			

Location

Loc Qty

Loc Code

LG

46

52319

46

D2596

Manufactured No

110

Each

0.0000

1



Web, 205 Skidtube



2 11/05/17

B58421 ② 11/05/17

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries



**DART**

DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

**RELEASED**  
07-06-28 *[Signature]*

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 38618

**GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:  
SEE NOTES ON  
PAGE 2 FOR D2580-041 AND  
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

RELEASED  
07-06-28-11

Diagram illustrating the grinding locations for the propeller cross-section:

- GRIND FLUSH (4 PLACES)
- GRIND FLUSH
- D2576-3 STEP
- LOCATION RIDGE ON UNDERSIDE OF D2576

Diagram of a wheel assembly with labels:

- D2579 SPACER
- D2596 WEB (REF)
- ALS7-1032-130 (REF) (TYP 50 PLACES)
- AFTER PERFORM.

1. CHA  
2. INS  
3. WE  
4. C'B

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

37.50  
DISTANCE TO AFT END  
OF D2596 WEB

3  
7

1.750 1.750

0.508 (TYP.)  
(40 PLACES)

REFER TO DETAIL A

8.750

17.375

26.000

34.188

57.313 (REF)  
7 EQUAL SPACES  
8.188 PITCH

38.0

91.500

190.0  
(D2500-1)

0.5

1.5

1.5

D

BLACK ANTI-SKID TO 0.5 ABOVE LOCATION RIDGE

BLACK ANTI-SKID TOP OF STEP TO 0.5 ABOVE BOTTOM EDGE

WELD AS PER DETAIL 8

8

1.5

1.5

1.5

P

P

P

P

P

P

P

P

REFER TO DETAIL C

D3566-1

D3566-5

D3566-11

D3564-5

D3564-9

D3564-13

D3564-13

AN3C4A BOLT (1)

AN960C10L WASHER (1)

(50 PLACES)

DESIGN

DATE

BY





CHKD

DATE

BY

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DESIGN 	DRAWN BY 
CHECKED 	APPROVED 
DATE 07.02.27	

**DART** DART AEROSPACE LTD.  
HAMMERSLEY, ONTARIO, CANADA

DRAWING NO.	REV. D
D2580	SHEET 2 OF 3
TITLE	SCALE
205 SKIDTUBE ASSEMBLY	1:24

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

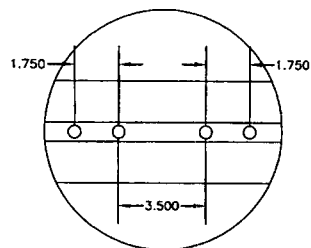
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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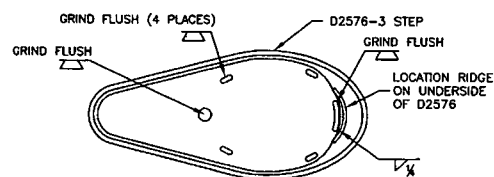
**NOTE:** Date & initial all entries

**DETAIL E**  
SCALE 5:24

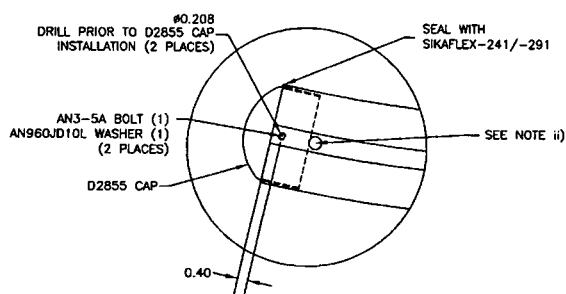


**RELEASED**  
07 Dec 18

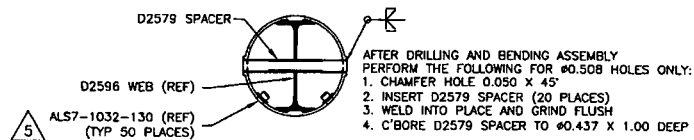
**DETAIL F**  
SCALE 5:24



**DETAIL G**  
SCALE 5:24



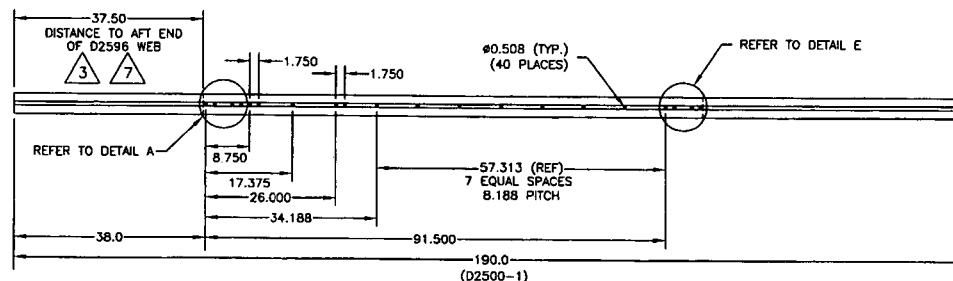
**SECTION H-H**  
SCALE 5:24



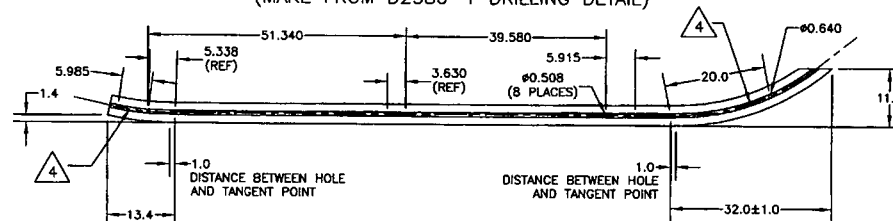
**D2580-045 NOTES**

- FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

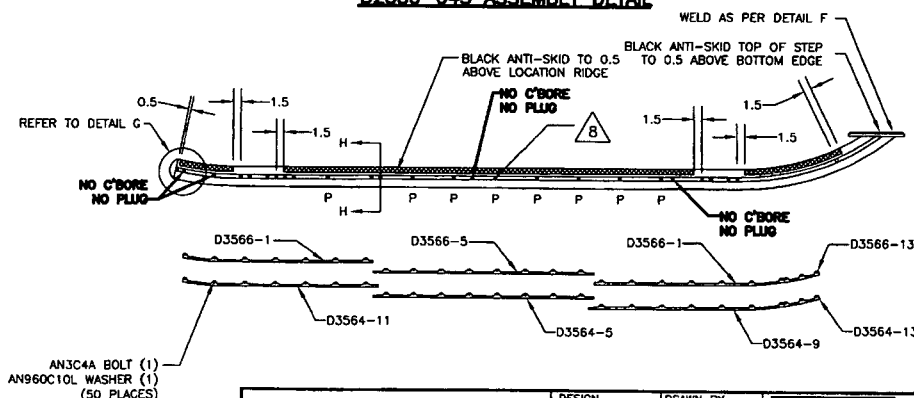
**D2580-1 DRILLING DETAIL**



**D2580-5 BENDING AND CUTTING DETAIL**  
(MAKE FROM D2580-1 DRILLING DETAIL)



**D2580-045 ASSEMBLY DETAIL**



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DESIGN RH	DRAWN BY RH	<b>DART</b>	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED H	APPROVED H	DRAWING NO. D2580	REV. D SHEET 3 OF 3
DATE 07.02.27	TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24	

W/O:			WORK ORDER CHANGES					
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